



PA240

ORDERCODE D6113



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You have bought a great, innovative product from DAP Audio.

The Dap Audio PA240 brings excitement to any venue. Whether you want simple plug-&-play action or a sophisticated show, this product provides the effect you need.

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Always get the best -- with DAP Audio !

Thank you!



Dap Audio

Dap Audio PA240™ Product Guide

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WARNING



CAUTION!
Keep this device away from rain and moisture!



**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY
BEFORE YOUR INITIAL START-UP!**

SAFETY INSTRUCTIONS

Every person involved with the installation, operation and maintenance of this device has to:

- be qualified
- follow the instructions of this manual



**CAUTION! Be careful with your operations.
With a dangerous voltage you can suffer
a dangerous electric shock when touching the wires!**



Before your initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

To maintain perfect condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

This device contains no user-serviceable parts. Refer servicing to qualified technicians only.

IMPORTANT:

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

- Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!
- Never remove warning or informative labels from the unit.
- Do not open the device and do not modify the device.
- Do not insert objects into air vents.
- Do not connect this device to a dimmerpack.
- Do not switch the device on and off in short intervals, as this would reduce the system's life.
- Only use device indoor, avoid contact with water or other liquids.
- Avoid flames and do not put close to flammable liquids or gases.
- Always disconnect power from the mains, when device is not used or before cleaning! Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.
- Make sure that the available voltage is not higher than stated on the rear panel.
- Make sure that the power-cord is never crimped or damaged. Check the device and the power-cord from time to time.
- Never use anything to cover the ground contact.
- Make sure that there is sufficient room on all sides of the system for air circulation.
- Avoid ground loops! Always be sure to connect the power amps and the mixing console to the same electrical circuit to ensure the same phase!
- Please turn off the power switch, when changing the power cord or signal cable.

- Make sure that the amplifier is turned down, before turning the power on or off. So you can avoid supersonic frequencies, which could damage your speakers.
- Don't put your equipment next to TV, radio, etc., because of interference or distortion.
- If you connect other parts of the system, be careful of ground loops.
- The best way to avoid ground loops is connecting the electrical system ground to one central point ("star" system). In this case the mixer can act as a central point.
- To prevent humming, please try different combinations of ground-lift or connect all chassis to the system ground, either by a power cable or frontcover rack screws.
- Before changing the ground, always turn off your amplifier.
- Please read this manual carefully and keep it for future reference. Remember that the amplifier has a better value on the market, if you save the carton and all packing materials.
- Prevent distortion! Make sure that all components connected to the PA240 have sufficient power ratings. Otherwise distortion will be generated because the components are operated at their limits.
- Make sure you don't use the wrong kind of cables or defective cables.
- Make sure that signals into the mixer are balanced, otherwise hum could be created.
- If device is dropped or struck, disconnect mains power supply immediately. Have a qualified engineer inspect for safety before operating.
- If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.
- If your Dap Audio device fails to work properly, discontinue use immediately. Pack the unit securely (preferably in the original packing material), and return it to your Dap Audio dealer for service.
- Allow time to cool down, before cleaning or servicing.
- For replacement use fuses of same type and rating only.
- This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.
- Repairs, servicing and electric connection must be carried out by a qualified technician.
- **WARRANTY:** Till one year after date of purchase.

OPERATING DETERMINATIONS

This device is not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

If this device is operated in any other way, than the one described in this manual, the product may suffer damages and the warranty becomes void.

Any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc. You endanger your own safety and the safety of others!

Improper installation can cause serious damage to people and property !

Description of the device

Features

The PA240 is an amplifier from DAP Audio.

- 4 combination Jacks inputs (XLR and 6.3mm)
- Line/micro switchable sensitivity with 24VDC phantom supply.
- 1 stereo RCA input, three stage sensitivity selectable.
- 600Ω signal (Tel. Paging) input
- 1 PREAMP OUT output.
- 1 MAIN IN input
- 1 MONITOR OUTPUT 1W/8Ω slave output for monitor music signal.

Input 1 priority on the other inputs with vocal activation.

Input 1 priority on the other inputs, activation with contact.

Outputs for speakers with constant impedance (4-8-16Ω) and constant voltage (25-70-100 V).

- Individual bass and treble tone controls
- VU-meter with LEDs.
- Protection against short-circuiting between output terminals.
- Option zone paging selectable function, 4 zone paging and ALL zone paging.
- Signal LED, Peak LED, Output Port LED

Overview

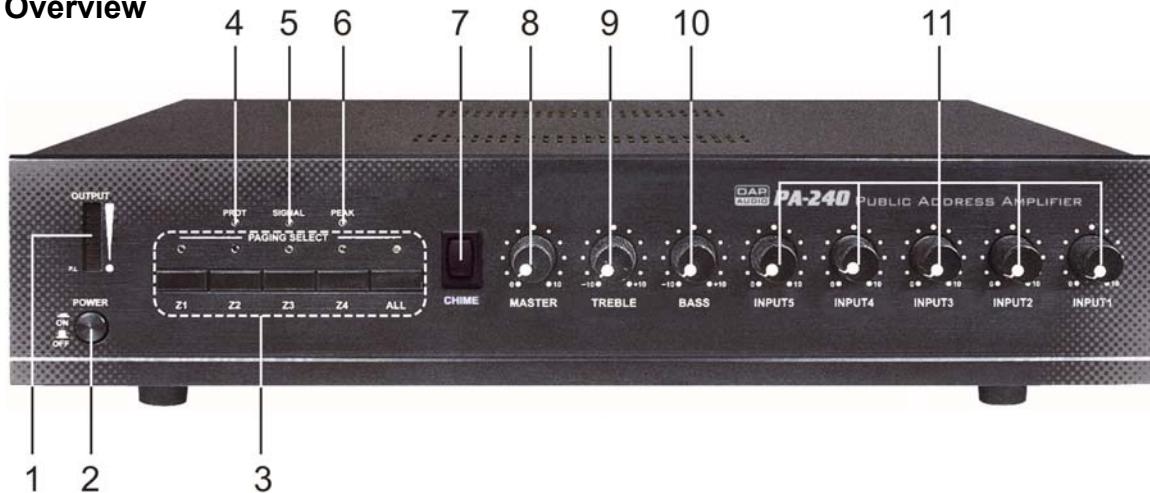


Fig. 1

1) Output Level meter: For proper operation of the amplifier keep the correct volume setting

2) AC Power On/Off

3) Zone paging selection switch: Speaker lines (Z1-Z4) of each zone can be connected/disconnected independently. To connect the speaker lines, press the ALL button. When pressing the ALL-button, allows you to make announcements to the entire zone regardless of the setting of the individual zone selection button.

4) Peak LED

5) Signal LED

6) Output-prot LED

7) Chime Button

8) Master Volume Control: Adjust the overall gain of the amplifier.

9+10) Bass + Treble : These are used to adjust equalization level for this amplifier. Turning the knobs in clockwise direction will increase LOW (HIGH)-frequencies, turning the knobs in a counter-clockwise direction will decrease LOW (HIGH)-frequencies.

11) Input Level Control: These controls let you individually set the volume of the sound source that are connected to the INPUT1, INPUT 2, INPUT 3, INPUT 4, INPUT 5. We recommend to leave the control of the momentarily not used inputs at their minimal setting "0".

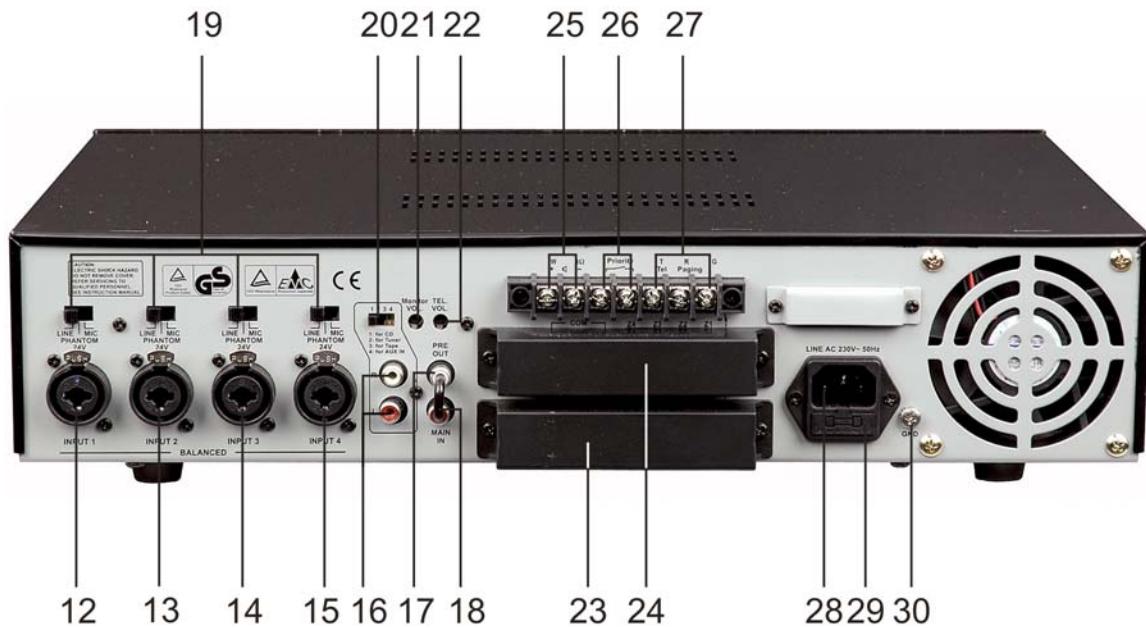


Fig. 2

12-15) INPUT 1-4: These four unbalanced combination jack 6.3mm inputs, dynamic microphone (30-600Ω) or a high level sound source (e.g. AM/FM tuner, cassette desk, CD player, etc.). INPUT 1 has a "Voice Priority" function that mutes all the other inputs as soon as a message is transmitted with a microphone; it is possible to exclude this function by calling a qualified SERVICE CENTER.

16) "AUX IN" inputs
The "R" and "L" sockets permit the input of the right (R) and left (L) channels of an audio source with a high-level output signal, such as an AM/FM tuner, a cassette deck, a CD player, etc. Use input sensitivity switch (17).

17) "PREAMP OUT" socket
This output sends the sum signal of all the connected sources and can be used to feed an external power amplifier, a signal processor (e.g. an equalizer), or any other external device. The unbalanced signal is affected by the individual input controls. Before using the PREAMP OUT you have to remove the bridging-strip between this socket and the "MAIN IN" socket (18) and preamp out terminal sockets.

18) "MAIN IN" socket
After removing the bridging-strip between the "PRE OUT" and the "MAIN IN" terminals you can include an external signal processor (e.g. an equalizer) in the audio-chain between the pre-amplifier and the power output stage of the power amplifier. This opportunity provides a proper solution whenever shaping or improving the audio signal is necessary (adjusting delay times, equalizing, eliminating unwanted feedback from the mic to the loudspeakers, etc.). The input is unbalanced.

19) Input Sensitivity Switch Line / Mic / Phantom Power 24V for INPUT 1, INPUT 2, INPUT 3 and INPUT 4
By setting this switch to the LINE position the IN1, IN2, IN3, IN4 input can be connected to an audio source with high level signal output. By setting the switch to the MIC position the IN1, IN2, IN3, IN4 input can be connected to a dynamic microphone with low impedance. By setting the switch to the 24V position connects the "24V" phantom supply on XLR of pin2 and pin3 of inputs IN1, IN2, IN3, IN4 necessary to operate condenser type microphones, which require this type of external supply.
It is recommended to use this switch with the general volume set on minimum.

20) Input sensitivity switch (AUX IN)
Setting this switch to the "CD" position, the "AUX IN" input is suitable for connecting to a CD player signal output. By setting this switch to the "TUNER" position, the "AUX IN" input is suitable for connecting to an AM/FM radio. By setting the switch to the "TAPE" position, the "AUX IN" input is suitable for connecting to a cassette player.

21) Music signal monitor output level control
The control lets you individually set the volume of the sound source output that is connected to the "MONITOR OUTPUT 1W/8Ω " (25) terminals. Turning the controls clockwise, increases the volume of

the corresponding source.

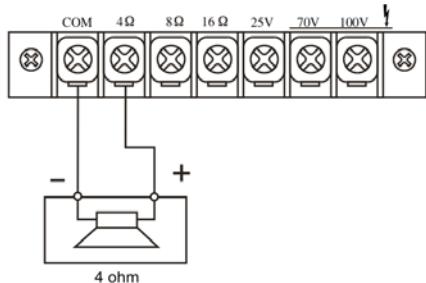
22) Tel. Paging input level control

This control lets you set the volume of the sound source, which is connected to the "Tel. Paging" (25).

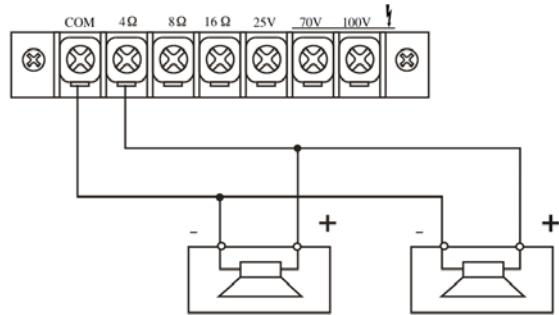
Turning the control clockwise increases the volume of the corresponding source. We recommend to leave the control of the momentarily not used inputs at their minimal setting "0".

23) Output terminals

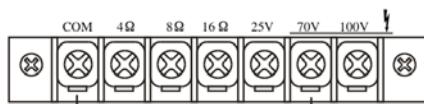
These 5 terminals allow connecting speakers.



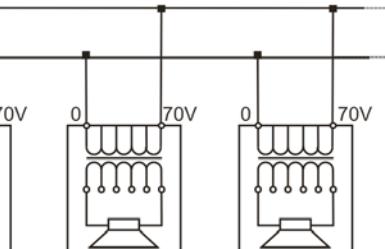
Connecting the speakers to 4 ohm output



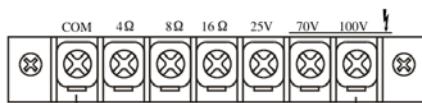
Total impedance 4 ohm



Connecting the speakers to 25V output



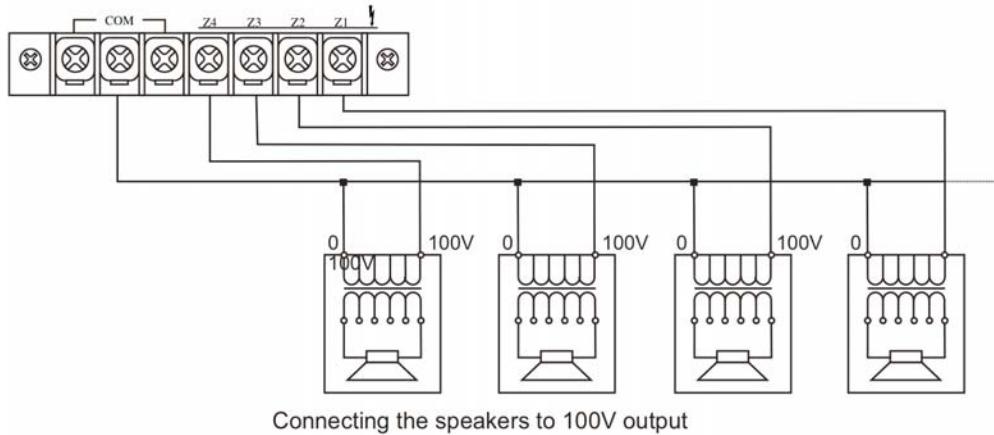
Connecting the speakers to 70V output



Connecting the speakers to 100V output

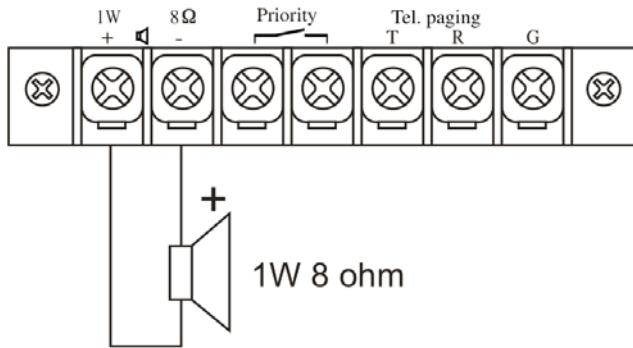
24) Zone output terminal

This output terminal connects to the speaker lines. Total speaker wattage is up to nominal power for zones 1-4. When using a zone selector, low-impedance speakers cannot be used. Default is constant voltage 100V output.



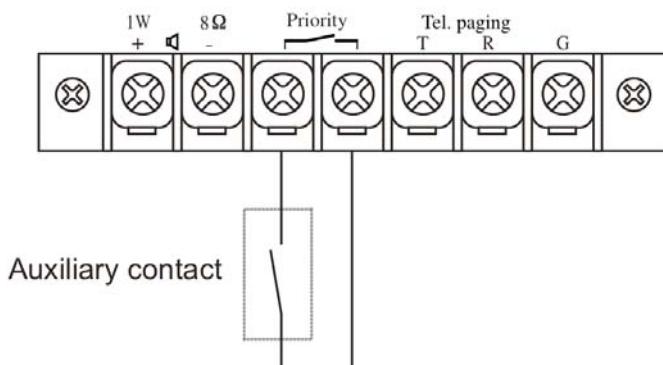
25) Output terminal for auxiliary loudspeaker

The terminal is meant for the connection of a small external loudspeaker that gets driven by an internal auxiliary power amplifier, providing a nominal output of 1 watt. Only the mixed audio signal coming from "AUX IN" is included in the output signal. In addition, the output signal is controlled only by the volume control of INPUT 5, music level control (11).



26) "Priority" terminal

When short-circuiting these terminals (i.e. by means of using an electrical switch), the audio signals coming from "AUX IN", are attenuated while the signals coming from IN2, IN3 and IN4 are gaining priority.



27) Input "Tel. paging"

The terminals input lets you connect to a telephone signal (600 ohms). The input features the "Voice Priority" function, which overrides all other input signals once, a telephone message is sent. If you want to have this function disabled forever, please contact a qualified SERVICE CENTER.

- 28) IEC Connector
- 29) AC fuse
- 30) Ground (GND) screw

Adjusting sensitivity for the "voice priority" function

To change the level of the signal determining activation of the "Voice Priority" function:

- 1) Unscrew the 6 screws on each side of the amplifier and take off the cover.
- 2) Inside the amplifier locate trimmer "VR 101" on the input PCB.
- 3) Using a small screwdriver and adjust the trimmer "VR 101". By turning the control clockwise the sensitivity increases.
- 4) Put the bottom back onto the amplifier.

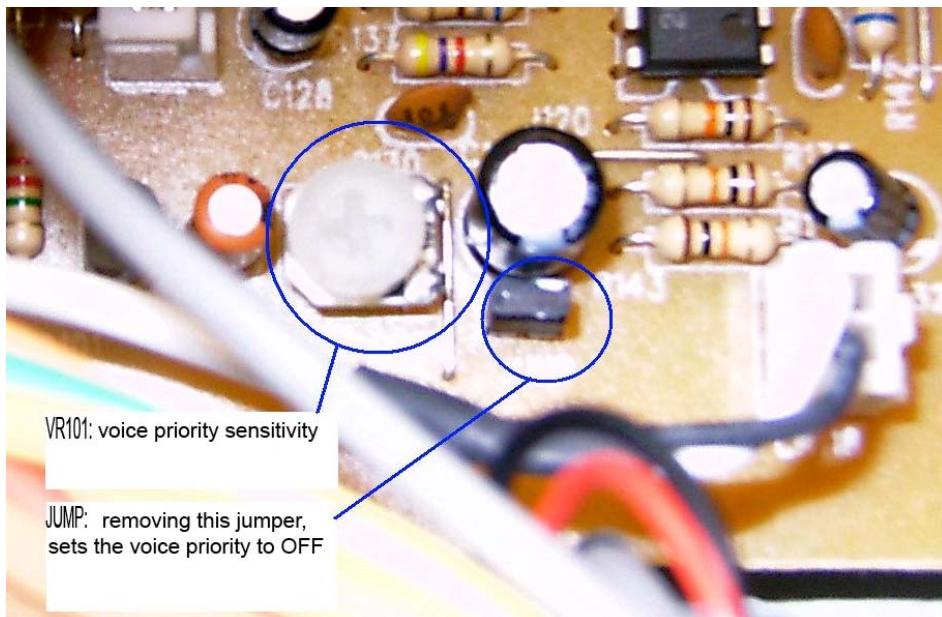


Fig. 3

Installation

PA240 Installation

Remove all packing materials. Check that all foam and plastic padding has been removed. If you want to use the amplifier in a 19" Rack, you must first install the 19" flaps. Then screw the amplifier/CD player in a 19" Rack. Connect all cables.

Always disconnect from electric mains power supply before cleaning or servicing.

Damages caused by non-observance are not subject to warranty.

Set Up and Operation

Before plugging the unit in, always make sure that the power supply matches the product specification voltage. Do not attempt to operate a 120V specification product on 240V power, or vice versa.

Do not supply power before all components of the system are set up and connected properly.

Input Connection

Microphones

The PA240 is equipped with 4 mic inputs. They can be used with unbalanced low impedance devices

Balanced LO Z Microphone

May also be connected to the unbalanced input

We advise you to use FL0215, FL023 or FL026 unbalanced mic cables from Dap Audio

Priority paging:

The amplifier features a transistorized circuit, which automatically mutes the other inputs and allows microphone #1 to talk over for special or emergency announcements. This electronic switch is operated when an audio signal comes in at the mic1 input eg. from a microphone.

4Ω, 8Ω, 16Ω Connection

- 1) The total impedance of the speakers connected must correspond to that selected on the amplifier's output terminals.
- 2) The sum of the power capacities of the speakers must be no lower than the amplifier's power capacity.
- 3) The length of the connecting cables must be short as possible; use a suitable cable diameter.

25V, 70V, 100V Connection

- 1) Each speaker must be equipped with a line transformer with an input voltage equal of the line voltage used.
- 2) The sum of the power capacities of the speakers must not exceed the output power capacity of the amplifier.
- 3) The length of the connecting cables must be short as possible; use a suitable cable diameter with sufficient class II isolation.

NOTE: Before you press the ON button, be sure to that the volume control is set to its minimum.

Low Impedance Speaker Output: 4Ω / 8Ω / 16Ω

The low impedance 4Ω / 8Ω / 16Ω terminal is for connecting one or more large-output speakers, when constant-voltage speaker systems are unnecessary or the distance between the amplifier and the speakers is below 50m.

The total speaker load impedance must be matched to the output impedance (4Ω / 8Ω / 16Ω) of the amplifier for the most efficient power-transfer.

Be sure that total impedance of speakers is above 4Ω / 8Ω / 16Ω however; do not raise the amplifier's output power above the allowable input power of the speaker. If the amplifier's output power should be raised above the maximum, the speakers could be damaged.

Example 4Ω Terminal

LOW IMPEDANCE OUTPUT

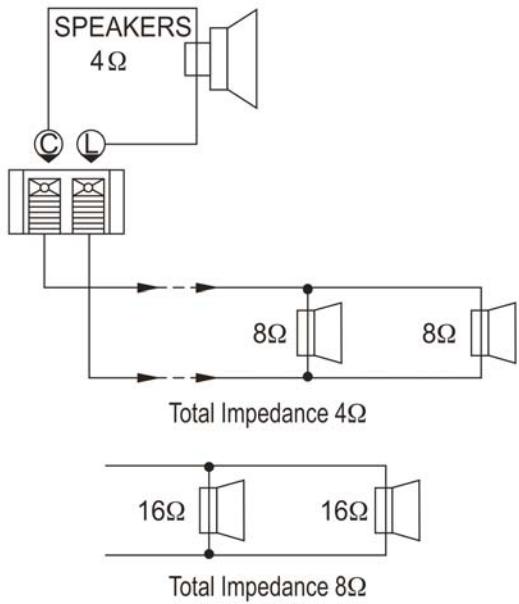


Fig. 3

Connection Input

The balanced phone jack inputs have a nominal impedance of 20 KΩ (10KΩ with unbalanced wiring) and will accept the line level output of most devices. The correct input depends on 2 factors: (1) whether the input signals are balanced or unbalanced, and (2) whether the signal source floats or has ground reference. Figures provide examples of recommended connection techniques for each type of signal source. The optional connector is shown.

Set Up Example 1

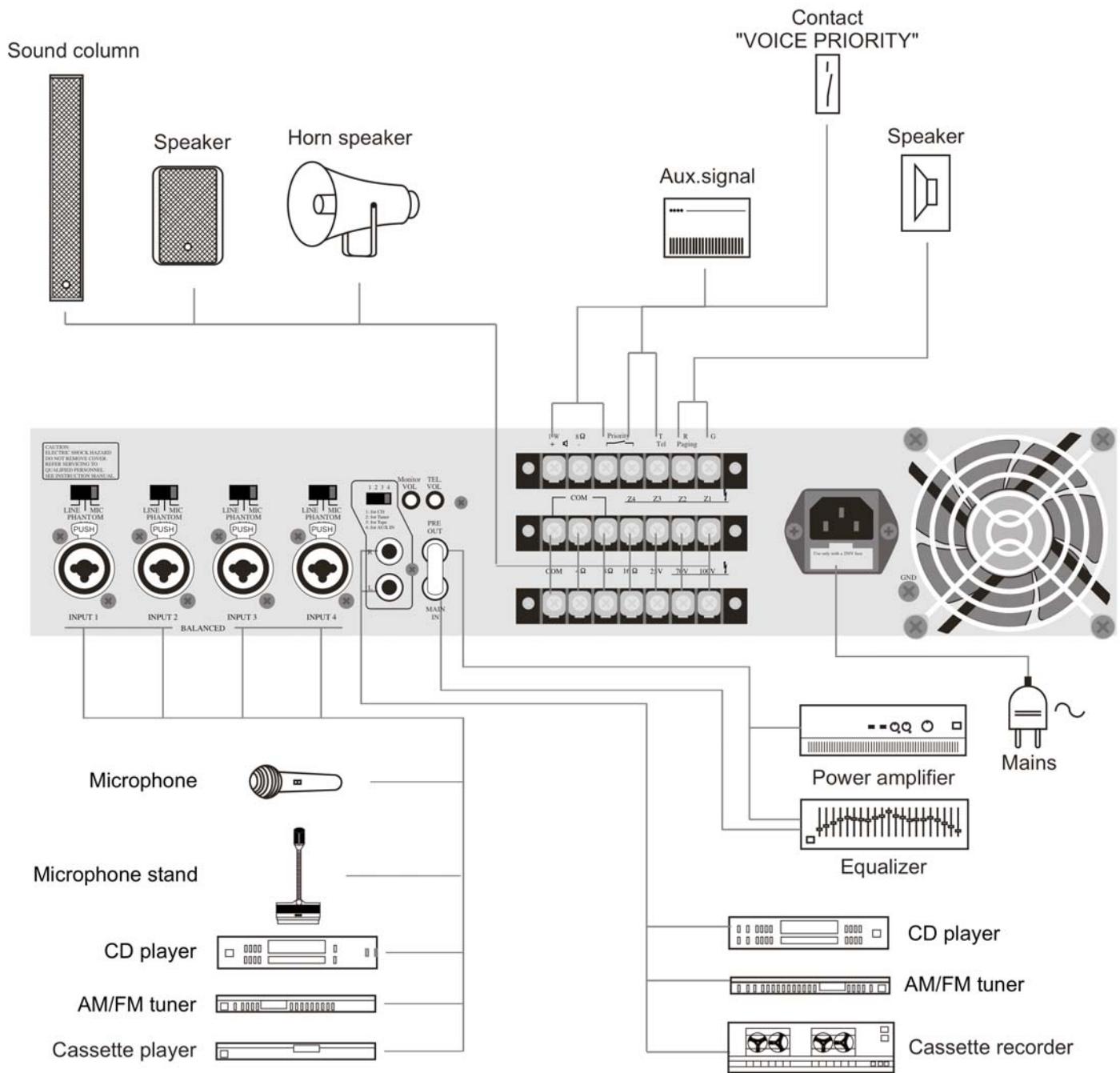


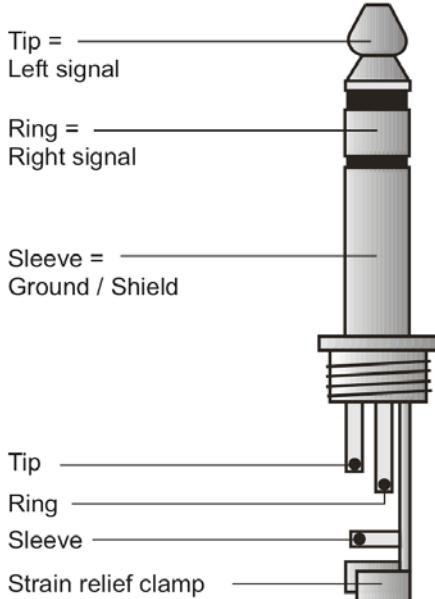
Fig. 4

Connection Cables

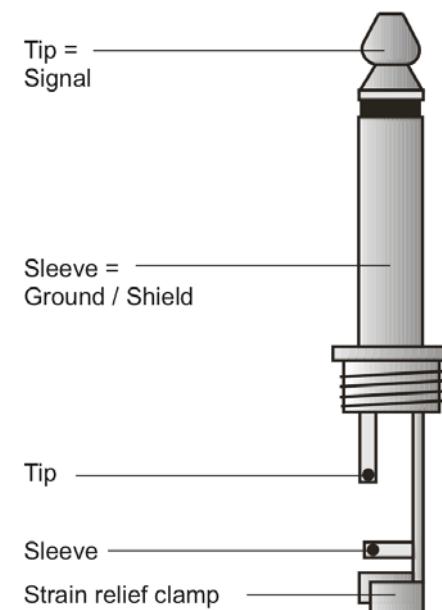
Take care of the connector cables, always holding them by the connectors and avoiding knots and twists when coiling them: This gives the advantage of increasing their life and reliability, which is always to your advantage.

Periodically check that your cables are in good condition, that they are correctly wired and that all their contacts are perfectly efficient: a great number of problems (faulty contacts, ground hum, discharges, etc.) are caused entirely by using unsuitable or faulty cables.

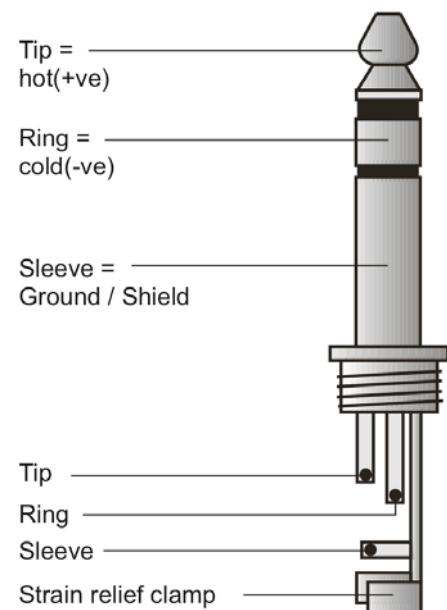
Headphones



Unbalanced mono 1/4" jack plug



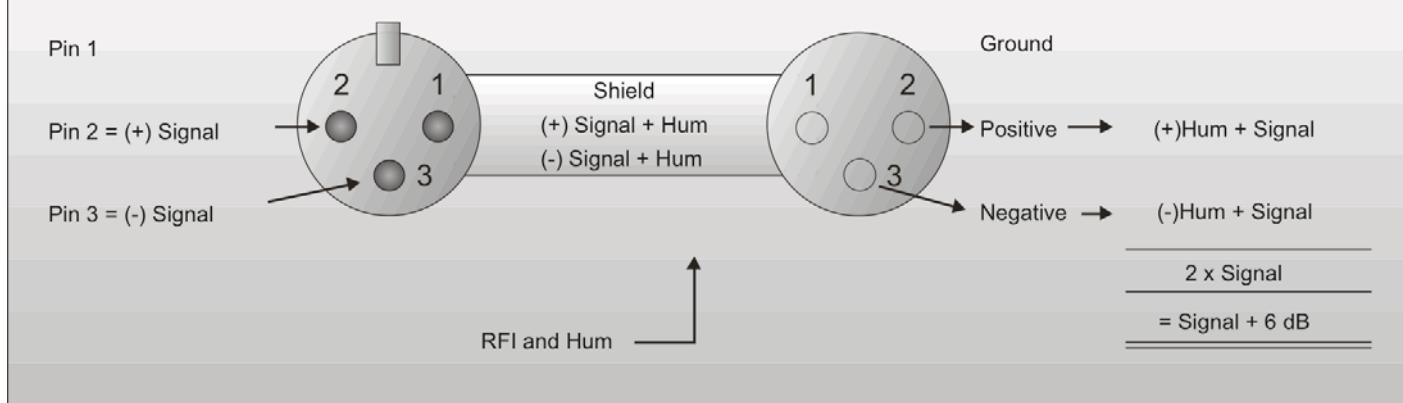
Balanced mono 1/4" jack plug



Output

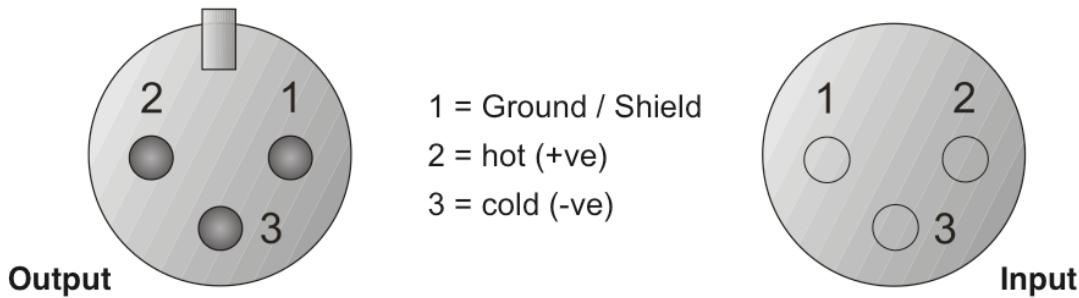
Cable

Input



Compensation of interference with balanced connections

Balanced use with XLR connectors



For unbalanced use PIN 1 and PIN 3 have to be bridged

Maintenance

The Dap Audio PA240 requires almost no maintenance. However, you should keep the unit clean. Disconnect the mains power supply, and then wipe the cover with a damp cloth. Do not immerse in liquid. Do not use alcohol or solvents. Keep connections clean. Disconnect electric power, and then wipe the audio connections with a damp cloth. Make sure connections are thoroughly dry before linking equipment or supplying electric power.

Troubleshooting

DAP Audio PA240

This troubleshooting guide is meant to help solve simple problems.

If a problem occurs, carry out the steps below in sequence until a solution is found. Once the unit operates properly, do not carry out following steps.

1. If you experience low output or no output at all, unplug the amplifier immediately.
2. Check power from the wall, all cables, the fuse, etc.
3. If all of the above appears to be O.K., plug the unit in again.
4. If nothing happens after 30 seconds, turn off the amplifier and unplug the device.
5. Return the machine to your DAP Audio dealer.

Problem	Cause	Solution
No lights illuminates when the POWER button is pressed.	1.Is the unit plugged into a live outlet? 2.Was the AC fuse opened? 3.Was the DC fuse opened?	1.Load outlet 2.Replace AC fuse 3.Replace DC fuse
No sound is heard	1.Check if the audio source was connected? 2.Was the audio source operating? 3.Is the volume turned up? 4.Are the speakers connected properly?	1.Connect to audio source output. 2.Operate the audio source. 3.Turn up the volume. 4.Correctly connect speakers.
The unit's output is intermittent or continuously buzzing	Check if the AC power supply is correct	
No output from one or more channels	1.Is the audio source operating? 2.Is the volume turned up? 3.Are the cables not defective?	1.Operate the audio source. 2.Turn up the volume. 3.Replace the signal cable.
Fuse often blown	1.Was the volume turned to full? 2.Were the speakers connected correctly? 3.Were the wires of the speaker connected correctly? 4.Is the impedance of the speakers correct? 5.Is the speaker good?	1.Turn down the level volume. 2.Connect the speaker correctly. 3.Connect the speaker wires correctly. 4.Connect the matching output terminal or replace with the matching impedance. 5.Replace the speaker.
The LED bar graph's output is normal, but there is no output at load.		1. The unit self-protection was worked, please press the power button to off wait for a time, is normal? 2. Check you connector's anything is normal? 3. Perhaps over load or deviant operation, cause this unit's DC fuse open, please call a qualified technician or consult an authorized.
Overload LED keeps blinking	1.Is the connection of the output terminal ok? 2.Is the connected load too heavy? 3. Is the input signal too loud?	1.Connect the speakers to the proper output terminal. 2.Reduce the total load and keep the impedance matching. 3. Adjust the signal level control

Product Specifications

Model: DAP Audio PA240

Power supply: 230 VAC

Fuse: 3,15A 250V

Output power capacity: 240W; max. 300W

Outputs for speakers: 4Ω, 8Ω, 16Ω

Outputs for speakers: 25V-70V-100V (2.6Ω, 20.5Ω, 41.7Ω

Frequency response: 30-30,000Hz (±3dB)

Total harmonic distortion: ≤ 0.5%(1KHz-nominal power capacity)

Signal / noise ratio: INPUT 1-4: ≥ 60dB rated power

AUX IN: ≥ 70dB rated power

MAIN IN: ≥ 80dB rated power

Input sensitivity: INPUT 1-4 / XLR and 6.3mm combination socket :bal./ unbal.

Mic: -55/-52dB (2.3/2.7mV) 600Ω, bal./unbal.

Line: -25/-20dB (50/100mV) 47KΩ, bal./unbal.

AUX IN / stereo RCA jack / unbalanced

CD: -5dB (570mV) 80KΩ

TUNER : -10dB (300mV) 56KΩ

ATPE: -15dB (200mV) 20KΩ

AUX1:-20dB(100mV) 20KΩ

MAIN IN / mono R A jack / 0dB(1V) 10KΩ / unbalanced

Additional outputs: PREAMP OUT / mono RCA jack / 1V 600Ω / unbalanced

Loudspeaker / on terminal board / 1W 8Ω

Tone control: Bass ±10dB at100Hz

Treble ±10dB at 10KHz

Controls: 7 volume controls for INPUT 1-4, AUX IN, 1W 8Ω and Tel. Paging.

1 master volume control

1 treble control

1 bass control

5 zone paging select switch

1 Chime Button

Indicator: LED Output Level indicator, Prot LED, Signal LED, Peak LED, Zone LEDs

Dimensions : 435 x 335 x 100 mm (LxWxH)

Weight : 12,5 kg

Design and product specifications are subject to change without prior notice.





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